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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/686,790	10/16/2003	Ferencz Denes	032026-0707	9651

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EXAMINER

BISSETT, MELANIE D

ART UNIT	PAPER NUMBER
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1711

DATE MAILED: 11/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/686,790	Applicant(s) DENES ET AL.	
	Examiner Melanie D. Bissett	Art Unit 1711	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 and 24-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-17 is/are allowed.
- 6) ☒ Claim(s) 18-22, 24-32 and 34-36 is/are rejected.
- 7) ☒ Claim(s) 33 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

1. The rejections have been altered to reflect the amended claims.

Claim Objections

2. Claim 25 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The claim refers to Mohs hardness, where claim 18 already requires this limitation.

Claim Rejections - 35 USC § 102

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
4. Claims 18-20, 21, 24-26, 29-32, and 34-36 are rejected under 35 U.S.C. 102(b) as being anticipated by Baker et al.
5. From a prior Office action:

Baker discloses methods of forming high molecular weight, highly crosslinked hydrocarbons and the carbon films produced therefrom (col. 1 lines 16-19; col. 10 lines 5-16). The methods may include forming a carbon film on a surface, thereby modifying the surface of the substrate (col. 6 lines 79-82). Resulting carbon films contain at least 99% carbon, thus containing less than 1% of hydrogen, fluorine, or oxygen (col. 9 lines 15-22). Because the product's surface would have the same structure as that claimed by the applicant, it is the examiner's position that the films would inherently possess the applicant's claimed hardness and friction properties.
6. Regarding claims 32-33, the reference teaches optical filters having the claimed coated substrate. Since the terms "window" and "lens" are interpreted in their broadest

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sense, it is the examiner's position that the optical filters of the reference would be encompassed by the claim.

7. Regarding the limitation that the surface films are not polycrystalline structures of crystalline domains within amorphous domains, it is noted that the reference makes no mention of such a structure. The applicant has not provided evidence or otherwise argued that the coatings of the Baker reference would necessarily contain such a morphology.

8. Claims 18-22, 24-25, and 27-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Selifanov et al.

9. From a prior Office action:

Selifanov discloses an abrasive material comprising an abrasive layer and a flexible plastic carrier layer, where the abrasive material contains a superhard diamond-like substance having not more than 0.1% hydrogen and oxygen (abstract). Because the reference teaches the adhesion of the abrasive material by chemical or physical bonds, it is the examiner's position that the reference suggests that the surface film is integrated into the polymeric substrate. The reference teaches that high portions of sp^3 bonds are preferred (col. 6 lines 21-63), indicating a crosslinked carbon structure. Surface irregularities have heights of 0.02-2.0 μm , indicating layer thicknesses of about the same values. Plastic carriers include polyethylene, polycarbonate, and polyacrylate (col. 8 lines 24-33). Examples show abrasive materials having around 99% of carbon. The reference teaches hardness values; however, it appears that the values were obtained in a manner different from those of the applicant. Regardless, because the product's surface would have the same structure as that claimed by the applicant, it is the examiner's position that the films would inherently possess the applicant's claimed hardness properties.

Allowable Subject Matter

10. Claims 1-17 are allowed.

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11. Claim 33 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. The closest prior art, the Cruz-Barba reference (from applicant's Form PTO-1449), discloses methods of treating a polymeric surface with a plasma comprising one or more SF_x species. However, the reference does not teach converting the fluorinated surfaces to contain at least 90% carbon. It is the examiner's position that this step provides a novel and unobvious step over the prior art.

13. Regarding claim 33, the Selifanov et al. reference teaches substrates having diamond-like coatings adhered by chemical or physical bonding to the substrate. However, the reference teaches abrasive particles and does not teach substrates usable as windows, medical implants, or lenses. For these reasons, it is the examiner's position that the claim provides a novel and unobvious step over the prior art.

Response to Arguments

14. Regarding the applicant's arguments that the coatings of the references would not possess the claimed hardness values, it is noted that both references teach the coatings to have high hardness values and diamond-like characteristics. Both teach crosslinked carbon coatings having a high percentage of carbon, as claimed. The graphitic coatings of the Baker reference are still highly crosslinked, as described, and thus would be expected to have higher hardness values, as described. Although the applicant argues that the references do not teach coatings of the claimed hardness

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values, no evidence has been provided to support this position. It is the examiner's position that the evidence of inherency outweighs the arguments of non-inherency.

15. In response to the applicant's arguments that the Selifanov reference does not teach crosslinked carbon materials, the examiner notes that the presence of high percentages of sp^3 bonds does in fact suggest crosslinking, since diamond structures themselves are crosslinked carbon materials. The reference teaches applying energy to graphite materials to form coatings having at least 60% of sp^3 bonds (examples; col. 6 lines 40-51), which further supports the crosslinking reaction between graphite layers or molecules.

16. Regarding the applicant's arguments that the reference does not teach abrasive materials "integrated into" a polymeric substrate as defined in the present specification, it is noted that the term is not defined in the specification. A description of preferred embodiments does not constitute a definition. It is the examiner's position that the reference teaches the abrasive material to be bonded physically or chemically to the substrate and thus teaches the coating "integrated into" the polymeric substrate. Moreover, the applicant's description of integration is essentially a layer which is chemically bonded to the underlying polymeric substrate, where the polymeric substrate has not been carbonized.

Conclusion

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melanie D. Bissett whose telephone number is (571) 272-1068. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Melanie D. Bissett
Primary Examiner
Art Unit 1711

mdb